1.23 95%CI -1.35~-1.11, P<0.00001), TG (WMD=-0.50, 95%CI -0.73~-0.27, P<0.00001); and statin+metformin was more effective than metformin in lowering LDL (WMD=-=-0.84, 95%CI: -1.33~-0.354, P=0.0009), TC (WMD=-1.28, 95%CI: -1.47~-1.10 P<0.00001), and TG (WMD=-0.27, 95%CI: -0.36~-0.19, P<0.00001). Heterogeneities were detected during the meta-analysis. **CONCLUSIONS:** Statins can positively reduce the concentration of total testosterone, TC, TG and LDL. It cannot be concluded, however, that statins have the long-term benefit. A large-scale, well-designed, randomized controlled study is needed to ascertain this uncertainty.

PDB6

PREDICTORS OF REACHING HBA1C GOAL IN T2DM PATIENTS USING DIPEPTIDYL PEPTIDASE-4 INHIBITORS (DPP4IS) COMBINATION THERAPY: A SUBGROUP ANALYSIS

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OBJECTIVES: To describe characteristics of T2DM patient subgroups who were more likely to achieve HbA1c goal < 7% with combination treatment of DPP4i with PIO or with MET using a predictive model. **METHODS:** Stepwise logistic regression was applied to MarketScan claims data to develop a predictive model that estimated the probabilities of HbA1c goal achievement in patients receiving DPP4i combinations. Sample selection criteria included: 1) T2DM diagnosis; 2) treatment of DPP4i with PIO or with MET; 3) baseline HbA1c ≥ 7%; and 4) with one-year continuous enrollment. Patients were ranked by the probabilityof achieving HbA1c<7% and grouped into cumulative percentiles; baseline characteristics of the optimal subgroups identified as the first 20th and 80th percentiles were reported. **RESULTS:** A total of 328 patients were included. The predictive model showed that patients who had neuropathy, cerebrovascular conditions, or higher total medication use at baseline were less likely to achieve goal on DPP4i combinations while patients with self monitoring blood glucose use at baseline were more likely to achieve goal (P< 0.05). The 80th percentile subgroup (n=270) had a goal reaching rate of 57.0%, mean age of 50.3 years old, 44.3% female, 38.5% on MET, 13.8% on thiazolidinedione (TZD), and HbA1c = 9.13% at baseline. The 20th percentile subgroup (n=83), achieved goal at the rate of 72.3%, mean age of 50.6 years old, 46.1% female, 53.9% on MET, 25.7% on TZD, and HbA1c = 8.96% at baseline. **CONCLUSIONS:** Predictive factors for reaching goal include: 1) use of self monitoring blood glucose, and 2) lack of neuropathy, cerebrovascular disease, or usage of medications. Subgroups that might benefit the most from DPP4i treatment were identified. These patients exhibited a higher likelihood of having prior use of MET or TZD, and baseline HbA1c less than 9.0%.

PDB7

NETWORK META-ANALYSIS OF FIXED DOSE COMBINATION THERAPIES FOR THE FIRST-LINE TREATMENT OF TYPE 2 DIABETES MELLITUS

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OBJECTIVES: To assess the relative efficacy and safety of fixed dose combinations (FDCs) of anti-diabetic drugs in treatment naïve patients with type 2 diabetes mellitus (T2DM) using network meta-analysis technique. **METHODS:** Randomized controlled trials, evaluating FDCs in treatment naïve patients with T2DM were searched via Embase® and MEDLINE®. The abstracts were reviewed and data extractions were conducted by two independent reviewers. The outcomes of interest included reduction in Hb1Ac levels, patients with HbA1c<7%, fasting plasma glucose (FPG) levels, and incidence of hypoglycemia. A network meta-analysis using WinBUGS® was performed to combine the reported direct and indirect evidence and a probability ranking for the included combinations was generated. **RESULTS:** Eleven trials (n=5781 patients) comparing the following FDCs: sulfonylureas/biguanides (SUL/BGU), thiazolidinediones/biguanides (TZD/BGU), dipeptidyl peptidase-4 inhibitors/biguanides (DPP-4/BGU), alpha-glucosidase inhibitors/biguanides (AGI/BGU), and thiazolidinediones/sulfonylureas (TZD/SUL) were included. Following network meta-analysis using BGU, TZDs, and SUL as common comparators, TZD/SUL was observed to be significantly better in terms of patients with HbA1c<7% than other FDCs [relative risk; 95% credible intervals vs. SUL/BGU (1.16; 1.03-1.3), vs. TZD/BGU (1.12; 1.01-1.24), and DPP-4/BGU (1.18; 1.07-1.29)]. Statistically, however, non-significant differences were observed among the FDCs other than TZD/SUL for this outcome. All FDCs achieved clinically meaningful reductions in HbA1c and FPG, though the differences between the FDCs were statistically non-significant. According to the probability ranking for reduction in HbA1c and FPG levels, the rank favored TZD/SUL followed by AGI/BGU, TZD/BGU, SUL/BGU, and DPP/BGU. The probability of occurrence of hypoglycemia was highest with SUL/BGU (78.3%) followed by TZD/SUL (20.2%), TZD/BGU (0.03%), and DPP-4/BGU (0.005%). Incidence of hypoglycemia was not reported for AGI/BGU. **CONCLUSIONS:** Clinically, all FDCs effectively achieved glycemic control in patients with T2DM, however, the risk ratios from network meta-analysis were inconclusive to determine the relative efficacy of these FDCs. The probability ranking suggested the potential use of TZD/SUL in treatment naïve T2DM patients.

PDB8

BARIATRIC AND METABOLIC SURGERY IN INDIA – EFFICACY AND SAFETY OF MINIMALLY INVASIVE PROCEDURES

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OBJECTIVES: Obesity and type 2 diabetes mellitus (T2DM) are major health issues in developing countries contributing to increased morbidity and mortality. Bariatric surgery is an effective procedure leading to durable weight loss in morbidly obese patients, while metabolic surgery aims at resolving T2DM. The objective of our study was to assess the efficacy and safety of those procedures in Indians. **METHODS:** A comprehensive search was performed in PUBMED and websites of Indian medical databases and journals (www.indmed.org, www.dmri.in, www.n-mji.in, www.japi.in). Studies met the inclusion criteria if they enrolled Indian obese patients with or without T2DM undergoing following laparoscopic procedures: sleeve gastrectomy, Roux-en-Y gastric bypass, adjustable gastric banding, single-incision sleeve gastrectomy. **RESULTS:** Our search retrieved nine studies (978 patients) of which three included T2DM patients (N = 91) exclusively. Postoperative excessive weight loss ranged from 59.1% to 76.1% after 12-months and from 65.2% to 71.1% after 24-months of follow-up. BMI was reduced by 5.9-20.5 kg/m^2, dyslipidemia was resolved in 34-100% patients and hypertension was improved in 67-95% individuals around one year after surgery. Moreover, at the same time joint pain was reduced in 57-97% patients and sleep apnea in 100% subjects. The incidence of asthma and depression were also reduced following bariatric/metabolic surgery. Metabolic procedures carried out in the subset of diabetics were associated with T2DM resolution in 61-100% of patients, reduction of HbA1c by 2.3-4.0 percentage points and improvement in fasting blood glucose by 60-144 mg/dl. Reduction of BMI among diabetics was in the range between 5.9–9.8 kg/m^2. Rates of postoperative complications were generally low and only one death was reported due to pulmonary embolism. **CONCLUSIONS:** Bariatric and metabolic procedures are effective in both weight reduction as well as improvement or resolution of T2DM. Those procedures are safe and beneficial in morbidly obese patients especially with T2DM.

PDB10

CLINICAL SURVEY TO ASSESS OUTCOMES IN DIABETES PATIENTS USING PEN NEEDLES OF DIFFERENT LENGTHS

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OBJECTIVES: Many studies have shown the distance from skin to muscle layer is shorter than imagined; it's important to ensure insulin injections are consistently made into subcutaneous layer, without leakage/backflow or subject-reported injection pain. The objective of this study was to assess clinical outcomes in T2DM patients switched from insulin injection with longer pen needles (PNs) to shorter PNs. **METHODS:** A retrospective study was conducted from July '09 to Jan '12 to compare lipohypertrophy, bleeding, bruising, insulin leakage, pain, and bulge on skin in a clinic in Yilan, Taiwan. Eighty-two patients with diabetes who were prescribed injectable insulin were included. Before Jul '09, all patients were prescribed 8 mm PNs. There was no limitation of insulin type, dosage, gender or education level. From July 2009 to August 2011, PN length was switched to 5mm, then (beginning Jul '11) to 4mm. Injection techniques and injection areas were inspected by certified diabetes educators every 3 months for all subjects. Standard injection technique were taught and followed-up in patients. All statistical analyses were conducted using SAS software (vs. 9.1). **RESULTS:** Demographic characteristics: age 60.5±14.3 years, 58.5% males, 92.7% T2DM, diabetes duration 16.0±7.0 years and insulin injection duration 6.8±4.2 years. A1C: 8.3±1.5%, 8.1±1.2% and 8.1±1.1% (p=0.3180); BMI: 25.3±3.4kg/m^2, 25.1±3.4kg/m^2 and 25.4±35.4kg/m^2 (p=0.8565). The bleeding/bruising decreased from 64.6% to 56.1% to 54.9% (p=0.0904), lipohypertrophy formation decreased from 26% to 20% to 15% (p= 0.1954). Reports of insulin leakage from tip or skin (p=0.8715, 0.5644), pain perception (p=0.1379) and bulge on skin (p=0.8039) were not statistically significant between 5mm and 4mm PNs. **CONCLUSIONS:** No significant changes in A1C and BMI associated with change in needle length from 8mm to 5mm and from 5mm to 4mm were observed. There was no apparent increase in leakage of insulin. A trend towards less bleeding and pain was observed when using shorter needles.

PDB11

EFFICACY OF EXENTAIDE IN TYPE 2 DIABETES MELLITUS IN A LOCAL HOSPITAL IN TAIWAN: A PILOT STUDY

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OBJECTIVES: Exenatide is a new antidiabetic agent which is an analog of incretin (glucagon-like peptide 1) with a adjunctive therapy with type 2 diabetes mellitus (T2DM),and has adverse events of nausea, vomiting and poor appetite. To assess the clinical efficacy of exenatide in T2DM. **METHODS:** Inclusion criteria were T2DM with inadequate glycemic control under oral antidiabetic agnets or insulin therapy. Exenatide were added on by the reatment course of exenatide is 5μg twice a day at first month and then adjusted to 10μg twice a day if tolerated. The primary outcomes are influence on HbA1C level and body weight. **RESULTS:** Eighteen patients, who were 7 male and 11 female with mean age of 43.46, were recruited. Of them had a mean body weight of 97.15kg and mean HbA1C of 9.1%. HbA1c improved significantly after 3 months and 6 months with mean reduction of 0.75%(p<0.002) and 0.97%(p<0.009). Mean body weight mild decreased at 3 months (4.33 kg) and reduced significantly at 4 months and 6 months with 5kg (p<0.005) and 9.74kg (p<0.0006). **CONCLUSIONS:** Exenatide improve HbA1c and body weight greatly within 6 months in a local hospital and may have great affect on the changing of life style, like diet control and frequency of Self-Monitoring of Blood Glucose. In future, a larger and long time study would need to demonstrate the validity of exenatide on the taiwanese.

PDB12

ROLE OF CHROMIUM IN TYPE-2 DIABETES THERAPY: A SYSTEMATIC REVIEW STUDY